

# A Timeline of Firsts from Remcom EM Simulation Software



For 30 years, Remcom's software has enabled the world's most advanced engineering teams to deliver their devices to market. Our products and agile corporate structure have set the standard for innovation in the EM simulation market, establishing many "firsts" along the way. Contact Remcom today to partner with our experts and achieve excellence with your own projects.

XFdtd® 3D Electromagnetic Simulation Software provides engineers with powerful tools to shorten development time and release products to market sooner. Optimize your device designs with our leading antenna simulation software.

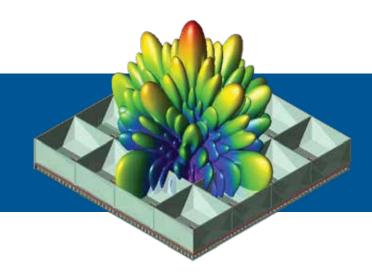


Wireless InSite® 3D Wireless Prediction Software's unique ray-tracing capability analyzes site-specific radio wave propagation and wireless communication systems while overcoming the limitations of traditional ray-tracing methods.





# XFdtd 3D Electromagnetic Simulation Software



## 1994

One of the first EM tools with a UX for problem construction and result viewing

### 1998

First commercial EM solver with multiple CPU parallelization

### 2002

First commercial EM solver to provide fine-grain parallelization for distributed computing using MPI

### 2005

One of the first solvers to integrate GPU acceleration

### 2013

First commercial time-domain EM solver to support huge problems (0.5-4 TB+)

### 2016

First commercial tool to optimize circuit element values using 3D full-wave techniques

### 2024

First UX for co-simulation subcircuit optimization

1995

First to obtain S-Parameters directly from EM simulations

2001

First commercial EM solver to mesh and solve a complex structure on the laptop or mobile phone

2004

First nonlinear magnetic materials with hysteresis

2009

First in-house GPU-accelerated FDTD

2013

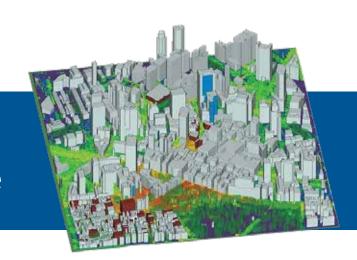
First commercial EM tool enabling nodal MPI-GPU

2019

One of the first to integrate circuit + full-wave co-simulation



# Wireless InSite 3D Wireless Prediction Software



# 2002

One of the first commercially-available ray-tracing modeling suites for urban multipath

## 2009

First optimized ray engine, providing extremely efficient, high-fidelity ray-tracing

### 2011

First to explore scattering from wind turbines

## 2017

First ray tracer with diffuse scattering

### 2022-Present

First to enable lunar propagation for Artemis missions

2007

First site-specific urban propagation models for real time

2011

First GPU-accelerated shooting and bouncing ray solver

2016

First MIMO ray tracer providing accurate sub-H-matrix

2022

First ray optics-based metamaterial scattering

2023

First broadband ray tracer